UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,540	09/24/2004	Kai-Kuang Ho	13365-US-PA	5539

31561 7590 11/19/2007

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
NGUYEN, TRAM HOANG	
ART UNIT	PAPER NUMBER
2818	

NOTIFICATION DATE	DELIVERY MODE
11/19/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW

Office Action Summary	Application No.	Applicant(s)	
	10/711,540	HO ET AL.	
	Examiner	Art Unit	
	Tram H. Nguyen	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25 and 28-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25,28-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In response to the communications dated 08/22/2007, claims 25,28-34 are pending in this application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Wakasima et al. (US 4,532,371; hereinafter Wakasima)

Regarding **claim 25**, Figs. 3-4 or 6 of Wakasima discloses a chip (2) with polymer (protective layer 5 is made of silicone rubber which is also known as one kind of polymer) thereon, comprising:

at least: a chip (2) having an active surface (refer to the upper surface of the chip 2);

a polymer (protective layer is made of silicone rubber which is also known as one kind of polymer), disposed at periphery of the active surface of the chip extending to sidewalls of the chip (see fig. 4 or 6); and

a plurality of wires (3) electrically connecting the chip (2) and a carrier (leads 12 and 13 of lead frame 1 as shown in fig. 1(a)) for carrying the chip (2), wherein an end of each of the wires connected with the active surface of the chip is covered by the

polymer and the other end of each of the wires connected with the carrier is exposed outside of the polymer (see fig.4 or 6).

Regarding **claim 28**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above. Besides, fig. 4 or 6 of Wakasima shows the polymer (5) turther covers a portion of the carrier (12).

Regarding **claim 29**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above. Besides, Wakasima teaches the carrier (leads 12 and 13 of lead frame 1 as shown in fig. 1) comprises a lead frame.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakasima as applied to claim 25 above, and further in view of Jiang et al. (US 7,037,756; hereinafter Jiang).

Regarding **claim 30**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above except for the polymer is shaped as ring covering whole periphery of the active surface of the chip.

Jiang teaches a stacked microelectronic devices packaging (fig. 3C) wherein wire coating segment (60) has a ring shape that covering electrical contacts (36) and

bonding wires (38) and extending around a periphery of the component (30) (see Jiang: col. 6, lines 35-41).

Therefore, it would have been obvious to one having ordinary skills in the art at the time the invention was made to specify the shape of the polymer layer of Wakasima to have the ring shape of coating segment as taught by Jiang in order to stack multiple chips without need of any other adhesive.

Regarding **claim 31**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above except for the polymer is shaped as strips covering two opposite edges of the active surface of the chip.

Jiang teaches a stacked microelectronic devices packaging (fig. 3C) wherein wire coating segment (60) is applied as two discrete wire coating segments covering two parallel rows extending adjacent opposite edges of the electronic component (30))(see Jiang: col. 6, lines 41-50).

Therefore, it would have been obvious to one having ordinary skills in the art at the time the invention was made to specify the shape of the polymer layer of Wakasima as strips covering two opposite edges of the active surface of the chip as taught by Jiang in order to stack multiple chips without need of any other adhesive.

Regarding **claim 32**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above except for the polymer is shaped as plurality of pieces covering four corners of the active surface of the chip.

Jiang teaches a stacked microelectronic devices packaging (fig. 3C) wherein wire coating segment (60) is a plurality of coating segments covering four corners of two parallel rows that extending adjacent opposite edges of the electronic component (30).

Therefore, it would have been obvious to one having ordinary skills in the art at the time the invention was made to specify the shape of the polymer layer of Wakasima as plurality of pieces covering four corners of the active surface of the chip as taught by Jiang in order to stack multiple chips without need of any other adhesive.

Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakasima.

Regarding **claim 33**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above except for the polymer comprises a stress buffer polymer. However, it would have been obvious to one having ordinary skills in the art at the time the invention was made to modify the polymer material as a stress buffer polymer since the stress buffer polymer material reduces the temperature-induce stress on the die.

Regarding **claim 34**, Wakasima discloses all the limitations of the claimed invention for the same reasons as set-forth above except for the stress buffer polymer comprises epoxy resin or polyimide. However, it would have been obvious to one having ordinary skills in the art at the time the invention was made to choose polymer materials comprising: epoxy resin or polyimide since epoxy resin or polyimide have

been widely used as stress buffer polymers to improve the reliability of semiconductor devices.

Conclusion

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tram Hoang Nguyen whose telephone number is (571)272-5526. The examiner can normally be reached on Monday-Friday, 8:30 AM – 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571)272-1657. The fax numbers for all communication(s) is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1625.

THN
Art Unit 2818
11/01/2007

STEVEN LOKE
SUPERVISORY PATENT EXAMINER